

**d. Remarks**

**At pages 2-3, the Office Action rejects claims 1-20 as being obvious over a combination of US Patent 6,157,031 to Prestage et al and US Patent 5,166,100 of Gossard et al.**

The Applicants respectfully object to the form of the rejections as made by the Examiner. In particular, the patent rules state the following with respect to rejections.

When a reference is complex or shows or describes inventions other than that claimed by the applicant, the particular part relied on must be designated as nearly as practicable. The pertinence of each reference, if not apparent, must be clearly explained and each rejected claim specified.

37 C.F.R. § 1.104 (c) (2) (underlining added).

While the pending rejections cite specific portions of the art relied on, the rejections do not map individual elements of the claims onto individual elements of said art. As a result, the Applicants must guess how the Examiner is applying the cited prior art to the pending claims. Without some such mapping, the “pertinence of each reference” is not “clearly explained” as required under 37 C.F.R. § 1.104 (c) (2). Due to the absence of a clear explanation, the Examiner has not provided a *prima facie* case of obviousness.

Indeed, an attempt to map individual elements of the pending claims onto specific elements of the cited art makes evident that the pending claims are non-obvious over the cited combination. To illustrate this, Applicants consider part of the rejection where the Office Action states that:

Prestage discloses a method of fabricating an apparatus comprising: a semiconductor or dielectric wafer having front and back surfaces; a sequence of alternating conductive and dielectric layers formed over said front surface, the sequence including top and middle conductive layers, the middle conductive layer being closer to said wafer than the top conductive layer; and a bottom conductive layer, and wherein the middle conductive layer has a substantially right cylinder cavity that crosses a width of the middle conductive layer, the top and bottom conductive layers cap respective first and second ends of the cavity (col. 3, lines 9-24, col. 2, lines 50-53 & 65-67, col. 5, lines 60-67, col. 7, lines 52-53, col. 8, lines 20-33, and Fig. 5A); ...

Office Action, page 2, numbered paragraph 3, (underlining added).

With respect to the above-citation, several elements are not disclosed in the above-cited portions of Prestage as discussed below.

First, the above-cited portions of Prestage do not disclose a semiconductor or dielectric wafer as recited in pending claims 1 and 12. A wafer is a substantially planar

substrate capable of providing structural support for thin layers located thereon. Instead of a dielectric or semiconductor wafer, Prestage discloses substrates formed of alternating conducting and thin insulating layers. See e.g., Prestage, Fig. 5A, sequence of layers 500 and 502. In the lack of an explanation from the Office Action, Applicants assume that this multi-layer substrate is proposed as teaching the wafer recited in claims 1 and 12. But, this multi-layer substrate is neither a semiconductor wafer substrate nor a dielectric wafer substrate, e.g., it is not predominantly made of semiconductor or dielectric. For that reason, the substrates of the cited portions of Prestage do not teach the wafer of pending claims 1 and 12.

Second, pending claims 1 and 12 recite both a wafer and a sequence of alternating conductive and dielectric layer. While Prestage does disclose a sequence of alternating conducting and dielectric layers, e.g., the sequence of layers 500 and 502 in Fig. 5A, Applicants find no disclosure of a separate wafer, i.e., a structural substrate, in the above-cited portions of Prestage. Thus, Prestage does not disclose both a wafer and a sequence of conductive and dielectric layers over the wafer as recited in pending claims 1 and 12.

Third, the above-cited portions of Prestage do not disclose a middle conductive layer having a substantially right cylinder cavity that crosses a width thereof, wherein top and bottom layers cap the ends of the cylindrical cavity as in pending claims 1 and 12. For example, while Prestage's Fig. 5A does show a cylindrical cavity 504, the cavity 504 is not located in one of the conducting layers 502 of the structure. In particular, while various ones of the conducting layers 502 may include portions of the cavity 504. The portion of the cavity 504 in any one of the conducting layers 502 is not a substantially right cylindrical cavity as in pending claims 1 and 12. Also, the cavity 504 is located along each conducting layer 502 rather than crossing a width, i.e., a thickness, of one of the conducting layers 502. Also, even if Prestage discloses conducting caps on the ends of the cylindrical cavity 504, neither of the caps is formed by a conducting layer of the same sequence of conductive and dielectric layers as in pending claims 1 and 12.

Finally, the Office Action does not rely on other portions of the cited references to teach the above-described features of pending claims 1 and 12. Thus, each of the above-described deficiencies provides an independent reason for concluding that the Office

Action has not provided a prima facie case of obviousness. For these reasons, Applicants request that the obviousness rejections of pending claims 1 and 12 be withdrawn.

The obviousness rejections of dependent claims 2 – 11 should also be withdrawn, at least, by the dependence of these claims on non-obvious claim 1.

The obviousness rejections of dependent claims 13 – 20 should also be withdrawn, at least, by the dependence of these claims on non-obvious claim 12.

For the above-described reasons, Applicants request allowance of pending claims 1 – 20.

No Fee is required.

In the event of any non-payment or improper payment of a required fee, the Commissioner is authorized to charge or to credit **Lucent Technologies Deposit Account No. 12-2325** to correct the error.

Respectfully,



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